

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**LISTING OF CLAIMS:**

1. (Previously Presented) The optical glass of claim 11 exhibiting a refractive index in the range of from 1.75 to 2.0, an Abbé number in the range of from 20 to 28.5, and a viscosity at a liquid phase temperature equal to or higher than 0.4 Pa·s.

2. (Previously Presented) The optical glass of claim 108 exhibiting a refractive index in the range of from 1.75 to 2.0, an Abbé number in the range of from 20 to 28.5, and a glass transition temperature equal to or less than 540°C.

3. (Previously Presented) The optical glass of claim 109 exhibiting a refractive index in the range of from 1.75 to 2.0, an Abbé number in the range of from 20 to 28.5, and a transmittance  $\lambda$  80 is equal to or less than 500 nm and a transmittance  $\lambda$  5 is equal to or less than 385 nm.

Claims 4-10 (Canceled)

11. (Currently Amended) An optical glass comprising as molar percentages, 15-30 percent of  $P_2O_5$ ; 0.5-15 percent of  $B_2O_3$ ; 5-25 percent of  $Nb_2O_5$ ; 6-40 percent of  $WO_3$ ; 4-45 percent of at least one  $R'_2O$  selected from the group consisting of  $Li_2O$ ,  $Na_2O$ , and  $K_2O$ ; 1-5 percent of  $K_2O$ ; 0-30 percent (excluding 30 percent) of at least one RO selected from the group consisting of BaO, ZnO, and SrO; and 2-9 percent of  $TiO_2$ ; with the total content of the above-stated components being equal to or more than 95 percent, and wherein the optical glass does not comprise an amount of  $GeO_2$ .

12. (Original) The optical glass of claim 11 wherein said optical glass comprises 0-25 molar percent (excluding 0 molar percent) of BaO.

Claims 13-16 (Canceled)

17. (Previously Presented) The optical glass of claim 11 wherein said optical glass has the composition comprising, as essential components,  $P_2O_5$ ,  $B_2O_3$ ,  $WO_3$ ,  $Nb_2O_5$ ,  $TiO_2$ , BaO, ZnO,  $Li_2O$ ,  $Na_2O$  and  $K_2O$  or the composition comprising the above essential components and  $Sb_2O_3$ .

18. (Previously Presented) The optical glass of claim 108 wherein said optical glass has the composition comprising, as essential components,  $P_2O_5$ ,  $B_2O_3$ ,  $WO_3$ ,  $Nb_2O_5$ ,

TiO<sub>2</sub>, BaO, ZnO, Li<sub>2</sub>O, Na<sub>2</sub>O and K<sub>2</sub>O or the composition comprising the above essential components and Sb<sub>2</sub>O<sub>3</sub>.

19. (Previously Presented) The optical glass of claim 109 wherein said optical glass has the composition comprising, as essential components, P<sub>2</sub>O<sub>5</sub>, B<sub>2</sub>O<sub>3</sub>, WO<sub>3</sub>, Nb<sub>2</sub>O<sub>5</sub>, TiO<sub>2</sub>, BaO, ZnO, Li<sub>2</sub>O, Na<sub>2</sub>O and K<sub>2</sub>O or the composition comprising the above essential components and Sb<sub>2</sub>O<sub>3</sub>.

Claims 20-58 (Canceled)

59. (Previously Presented) The optical glass of claim 11 wherein said optical glass comprises 0-11 percent of BaO.

60. (Previously Presented) The optical glass of claim 11 wherein said total quantity of Li<sub>2</sub>O, Na<sub>2</sub>O, and K<sub>2</sub>O is equal to or more than 29 percent.

61. (Previously Presented) The optical glass of claim 11, wherein said optical glass has a density of oxygen atoms contained in the range of from  $4.2 \times 10^{22}$  to  $5.2 \times 10^{22}/\text{cm}^3$ .

62. (Previously Presented) The optical glass of claim 108 wherein said optical glass has a density of oxygen atoms contained in the range of from  $4.2 \times 10^{22}$  to  $5.2 \times 10^{22}/\text{cm}^3$ .

63. (Previously Presented) The optical glass of claim 109 wherein said optical glass has a density of oxygen atoms contained in the range of from  $4.2 \times 10^{22}$  to  $5.2 \times 10^{22}/\text{cm}^3$ .

Claim 64. (Canceled)

65. (Previously Presented) The optical glass of claim 11 wherein said optical glass comprises 2-30 molar percent of  $\text{Li}_2\text{O}$ .

Claims 66-69. (Canceled)

70. (Previously Presented) The optical glass of claim 11 wherein said optical glass exhibits a glass transition temperature equal to and/or less than  $530^\circ\text{C}$  and a yield point temperature equal to or less than  $580^\circ\text{C}$ .

71. (Previously Presented) The optical glass of claim 108 wherein said optical glass exhibits a glass transition temperature equal to and/or less than 530°C and a yield point temperature equal to or less than 580°C.

72. (Previously Presented) The optical glass of claim 109 wherein said optical glass exhibits a glass transition temperature equal to and/or less than 530°C and a yield point temperature equal to or less than 580°C.

73. (Previously Presented) The optical glass of claim 62 wherein said optical glass exhibits a glass transition temperature equal to and/or less than 530°C and a yield point temperature equal to or less than 580°C.

74. (Previously Presented) The optical glass of claim 11 wherein said optical glass exhibits a refractive index in the range of from 1.7 to 2.0, an Abbé number in the range of from 20 to 32.

75. (Previously Presented) The optical glass of claim 108 wherein said optical glass exhibits a refractive index in the range of from 1.7 to 2.0, an Abbé number in the range of from 20 to 32.

76. (Previously Presented) The optical glass of claim 109 wherein said optical glass exhibits a refractive index in the range of from 1.7 to 2.0, an Abbé number in the range of from 20 to 32.

77. (Previously Presented) The optical glass of claim 62 wherein said optical glass exhibits a refractive index in the range of from 1.7 to 2.0, an Abbé number in the range of from 20 to 32.

78. (Previously Presented) The optical glass of claim 11 wherein said optical glass exhibits a liquid phase temperature equal to or less than 970°C.

79. (Previously Presented) The optical glass of claim 108 wherein said optical glass exhibits a liquid phase temperature equal to or less than 970°C.

80. (Previously Presented) The optical glass of claim 109 wherein said optical glass exhibits a liquid phase temperature equal to or less than 970°C.

81. (Previously Presented) The optical glass of claim 62 wherein said optical glass exhibits a liquid phase temperature equal to or less than 970°C.

82. (Previously Presented) An optical part being composed of the optical glass of claim 1.

83. (Previously Presented) An optical part being composed of the optical glass of claim 2.

84. (Previously Presented) An optical part being composed of the optical glass of claim 3.

85. (Previously Presented) An optical part being composed of the optical glass of claim 12.

86. (Previously Presented) An optical part being composed of the optical glass of claim 11.

87. (Previously Presented) An optical part being composed of the optical glass of claim 17.

88. (Previously Presented) An optical part being composed of the optical glass of claim 60.

89. (Previously Presented) An optical part being composed of the optical glass of claim 108.

90. (Previously Presented) An optical part being composed of the optical glass of claim 109.

91. (Previously Presented) An optical part being composed of the optical glass of claim 62.

92. (Previously Presented) A glass preform being composed of the optical glass of claim 1.

93. (Previously Presented) A glass preform being composed of the optical glass of claim 2.

94. (Previously Presented) A glass preform being composed of the optical glass of claim 3.

Claims 95-100 (Canceled)



101. (Previously Presented) A glass preform being composed of the optical glass of claim 62.

102. (Withdrawn) A method of manufacturing glass preforms wherein a prescribed amount of a piece of molten glass flowing out of a flowout pipe is received in a receiving mold to prepare a glass preform made of the optical glass of claim 1.

103. (Withdrawn) A method of manufacturing glass preforms made of the optical glass of claim 1, comprising the steps of :

a molten glass glob is made to fall by causing molten glass flowing out of a flowout pipe to drip naturally or by cutting with a cutting blade;

the molten glass glob is received in a depression in a forming mold, and in the process, air, a nonreactive gas or some other gas is blown out through minute holes in the depressions; and,

a layer of air is generated between the molten glass glob and the inner surface of depression in the forming mold and the molten glass glob is maintained and cooled within the depression in a state of essential non-contact with the inner surface of the depression until at least a portion of the outer surface of the molten glass glob reaches a temperature not greater than the melting temperature.

104. (Withdrawn) A method of manufacturing glass products comprising the steps of:

heating the glass preform prepared by the method of claim 102; and  
precisely press molding the heated glass preform to obtain a glass product.

105. (Previously Presented) The optical glass of claim 108 wherein said optical glass comprises 0-11 percent of BaO.

106. (Previously Presented) The optical glass of claim 109 wherein said total quantity of  $\text{Li}_2\text{O}$ ,  $\text{Na}_2\text{O}$ , and  $\text{K}_2\text{O}$  is equal to or more than 29 percent.

107. (Withdrawn) A method of manufacturing glass products comprising the steps of:

heating the glass preform prepared by the method claim 103; and  
precisely press molding the heated glass preform to obtain a glass product.

108. (Currently Amended) An optical glass comprising, as molar percentages, 17-30 percent of  $\text{P}_2\text{O}_5$ , 1-10 percent of  $\text{B}_2\text{O}_3$  (where the total quantity of  $\text{P}_2\text{O}_5$  and  $\text{B}_2\text{O}_3$  is 18-32 percent), 5-25 percent of  $\text{WO}_3$ , 10-23 percent of  $\text{Nb}_2\text{O}_5$ , 1-9 percent of  $\text{TiO}_2$  (where the total quantity of  $\text{WO}_3$ ,  $\text{Nb}_2\text{O}_5$  and  $\text{TiO}_2$  is 28-40 percent), 5-22 percent  $\text{Li}_2\text{O}$ , 4-22 percent  $\text{Na}_2\text{O}$ , 0.5-7 percent  $\text{K}_2\text{O}$  (where the total quantity of  $\text{Li}_2\text{O}$ ,  $\text{Na}_2\text{O}$ , and  $\text{K}_2\text{O}$  is 12-38

percent), 2-23 percent of BaO, 1-10 percent of ZnO (where the total quantity of BaO and ZnO is 3-25 percent), 0-8 percent of CaO, 0-8 percent of SrO, 0-4 percent of  $\text{Al}_2\text{O}_3$ , 0-4 percent of  $\text{Y}_2\text{O}_3$ , 0-1 percent of  $\text{Sb}_2\text{O}_3$ , and 0-1 percent of  $\text{As}_2\text{O}_3$ , where the total of all of these components is not less than 94 percent, and wherein the optical glass does not comprise an amount of  $\text{GeO}_2$ .

109. (Currently Amended) An optical glass comprising, as molar percentages, 14-32 percent of  $\text{P}_2\text{O}_5$ , 0.5-13 percent of  $\text{B}_2\text{O}_3$  (where the total quantity of  $\text{P}_2\text{O}_5$  and  $\text{B}_2\text{O}_3$  is 16-32 percent), 5-40 percent of  $\text{WO}_3$ , 5-23 percent of  $\text{Nb}_2\text{O}_5$ , 1-9 percent of  $\text{TiO}_2$  (where the total quantity of  $\text{WO}_3$ ,  $\text{Nb}_2\text{O}_5$  and  $\text{TiO}_2$  is 25-42 percent), 5-27 percent  $\text{Li}_2\text{O}$ , 3-27 percent  $\text{Na}_2\text{O}$ , 0.5-7 percent  $\text{K}_2\text{O}$  (where the total quantity of  $\text{Li}_2\text{O}$ ,  $\text{Na}_2\text{O}$ , and  $\text{K}_2\text{O}$  is 12-43 percent), 0-23 percent of BaO, 0-17 percent of ZnO (where the total quantity of BaO and ZnO is 0-25 percent), 0-8 percent of CaO, 0-8 percent of SrO, 0-4 percent of  $\text{Al}_2\text{O}_3$ , 0-4 percent of  $\text{Y}_2\text{O}_3$ , 0-1 percent of  $\text{Sb}_2\text{O}_3$ , and 0-1 percent of  $\text{As}_2\text{O}_3$ , where the total of all of these components is not less than 94 percent, and wherein the optical glass does not comprise an amount of  $\text{GeO}_2$ .

110. (Currently Amended) The optical glass of claim 108 wherein said total quantity of  $\text{Li}_2\text{O}$ ,  $\text{Na}_2\text{O}$ , and  $\text{K}_2\text{O}$  is equal to ~~ore~~ or more than 29 percent.

111. (New) A glass preform composed of an optical glass comprising, as molar percentages, 15-30 percent of  $P_2O_5$ , 0.5-15 percent of  $B_2O_3$ ; 5-25 percent of  $Nb_2O_5$ ; 6-40 percent of  $WO_3$ ; 4-45 percent of at least one  $R'_2O$  selected from the group consisting of  $Li_2O$ ,  $Na_2O$ , and  $K_2O$ , 1-5 percent of  $K_2O$ ; 0-30 percent (excluding 30 percent) of at least one RO selected from the group consisting of BaO, ZnO, and SrO; and 2-9 percent of  $TiO_2$ ; with the total content of the above-stated components being equal to or more than 95 percent.

112. (New) The glass preform according to claim 111, wherein the optical glass comprises 0-25 molar percent (excluding 0 molar percent) of BaO.

113. (New) The glass preform according to claim 111, wherein the optical glass has the composition comprising, as essential components,  $P_2O_5$ ,  $B_2O_3$ ,  $WO_3$ ,  $Nb_2O_5$ ,  $TiO_2$ , BaO, ZnO,  $Li_2O$ ,  $Na_2O$ , and  $K_2O$  or the composition comprising the above essential components and  $Sb_2O_3$ .

114. (New) The glass preform according to claim 111, wherein the total quantity of  $Li_2O$ ,  $Na_2O$ , and  $K_2O$  is equal to or more than 29 percent.

115. (New) A glass preform composed of an optical glass comprising, as molar percentages, 17-30 percent of  $P_2O_5$ , 1-10 percent of  $B_2O_3$  (where the total quantity of  $P_2O_5$

and  $B_2O_3$  is 18-32 percent), 5-25 percent of  $WO_3$ , 10-23 percent of  $Nb_2O_5$ , 1-9 percent of  $TiO_2$  (where the total quantity of  $WO_3$ ,  $Nb_2O_5$  and  $TiO_2$  is 28-40 percent), 5-22 percent of  $Li_2O$ , 4-22 percent of  $Na_2O$ , 0.5-7 percent of  $K_2O$  (where the total quantity of  $Li_2O$ ,  $Na_2O$ , and  $K_2O$  is 12-38 percent), 2-23 percent of  $BaO$ , 1-10 percent of  $ZnO$  (where the total quantity of  $BaO$  and  $ZnO$  is 3-25 percent), 0-8 percent of  $CaO$ , 0-8 percent of  $SrO$ , 0-4 percent of  $Al_2O_3$ , 0-4 percent of  $Y_2O_3$ , 0-1 percent of  $Sb_2O_3$ , and 0-1 percent of  $As_2O_3$ , where the total of all of these components is not less than 94 percent.

116. (New) A glass preform composed of an optical glass comprising, as molar percentages, 14-32 percent of  $P_2O_5$ , 0.5-13 percent of  $B_2O_3$  (where the total quantity of  $P_2O_5$  and  $B_2O_3$  is 16-32 percent), 5-40 percent of  $WO_3$ , 5-23 percent of  $Nb_2O_5$ , 1-9 percent of  $TiO_2$  (where the total quantity of  $WO_3$ ,  $Nb_2O_5$  and  $TiO_2$  is 25-42 percent), 5-27 percent of  $Li_2O$ , 3-27 percent of  $Na_2O$ , 0.5-7 percent of  $K_2O$  (where the total quantity of  $Li_2O$ ,  $Na_2O$ , and  $K_2O$  is 12-43 percent), 0-23 percent of  $BaO$ , 0-17 percent of  $ZnO$  (where the total quantity of  $BaO$  and  $ZnO$  is 0-25 percent), 0-8 percent of  $CaO$ , 0-8 percent of  $SrO$ , 0-4 percent of  $Al_2O_3$ , 0-4 percent of  $Y_2O_3$ , 0-1 percent of  $Sb_2O_3$ , and 0-1 percent of  $As_2O_3$ , where the total of all of these components is not less than 94 percent.